

**NOTE ON THE ROTATORIAN FAUNA OF BOSTON, WITH
DESCRIPTION OF NOTHOLCA BOSTONIENSIS, s. n.**

BY CHARLES F. ROUSSELET, F.R.M.S.

(Read October 2nd, 1908.)

PLATES 26 AND 27.

IN August of last year I had the honour of attending, as the delegate of the Quekett Microscopical Club, the Seventh International Zoological Congress in the United States of America. The members of the Congress, from all parts of the world, assembled on August 19th, 1907, at Boston, where they were most hospitably received and entertained by the American zoologists and local men of science, and in particular by the staff of Harvard University, in whose new Medical School the meetings of the Congress were held.

During a week's stay in Boston I examined the water of the ornamental lake in the very pretty Central Park, and finding it rich in Rotifera I filled two bottles with condensed and preserved material from this lake and from the "Frog Pond" close by, for future study.

The result of the examination of this material has brought to light forty different species of free-swimming Rotifera, one of which, *Notholca bostoniensis*, is new to science; another, a free-swimming *Oecistes*, probably also new, but not sufficiently well preserved to be determined with certainty, and several rare and interesting species which have been met with only once before.

The following is the list of species collected on Friday, August 23rd, 1907:

Rhizota.

Floscularia mutabilis, Bolton.

Oecistes (sp. ?), free-swimming.

Conochilus unicornis, Rouss.

Bdelloida.

Some *Bdelloida*, contracted and not recognisable.

Ploima. Il-loricata.

- Synchaeta longipes*, Gosse, abundant.
 „ *pectinata*, Ehrenbg.
 „ *cecilia*, Rouss.
 „ *oblonga*, Ehrenbg.
 „ *stylata*, Wierz.
Triarthra longiseta, Ehrenbg.
Polyarthra platyptera, Ehrenbg.
 „ *aptera*, Hood.
Notommata ansata, Ehrenbg.
Diglena forcipata, Ehrenbg.
Taphrocampa viscosa, Levander.
Proales daphnicola, Thompson.
 „ *petromyzon*, Ehrenbg.

Ploima. Loricata.

- Rattulus bicristatus*, Gosse.
 „ *rattus*, Ehrenbg.
 „ *cylindricus*, Imhof.
 „ *longiseta*, Shrank.
Diurella insignis, Herrick.
 „ *stylata*, Eyfert.
 „ *tenuior*, Gosse.
Diaschiza gibba, Ehrenbg.
Dinocharis pocillum, Ehrenbg.
Polychaetus subquadratus, Perty.
Euchlanis hyalina, Hudson.
Hudsonella pygmaea, Calman.
Cathypna rusticola, Gosse.
Ploesoma lenticulare, Herrick.
Metopidia rhomboides, Gosse.
 „ *lepadella*, Ehrenbg.
 „ *acuminata*, Ehrenbg.
Monostyla lunaris, Ehrenbg.
Pterodina parva, Ternetz.

- Brachionus pala*, Ehrenbg.
Anuraea cochlearis, Gosse.
Notholca longispina, Kellicot.
 ,, *bostoniensis*, sp. nov.

Notholca bostoniensis, sp. nov.

The most noteworthy rotifer found at Boston is this new species of *Notholca*. A glance at the figures on Plate 26 will show that it has considerable resemblance to *Notholca longispina* of Kellicot, a well-known and widely distributed species, but a closer examination will reveal important differences in the structure of the lorica.

Notholca longispina, which was also present in the same lake, reaches $720\ \mu$ ($\frac{1}{35}$ in.) in size, has six occipital spines—namely, a lateral pair of equal size, a dorsal asymmetric pair having a very long spine on the *right* side of the median line and a very short straight spine on the *left* side, and a further pair of small spines, one on each side between the dorsal and lateral pairs.

The new species, *Notholca bostoniensis*, is altogether much smaller in size, just one-half in total length, and has only four occipital spines—namely, two equal small lateral spines and a dorsal asymmetric pair, with the very long and stronger spine on the *left*, and the short one on the *right* of the median line. The three small occipital spines are nearly equal in size. On Plate 27 I have reproduced figures of both species, *N. bostoniensis* and *longispina*, drawn to the same scale to emphasise these differences.

The occipital spines of *N. bostoniensis* taper to a fine point and show at regular intervals very fine notches, which appear to run spirally round the spines. Posteriorly the lorica tapers into a long, nearly straight spine which is quite smooth and free from notches.

The body of the *lorica* is smaller but distinctly more swollen in the middle, and less triangular in form than that of *longiseta*. The mental edge is undulate with a notch in the centre.

My first impression when seeing these small long-spined *Notholca* swimming in considerable numbers in the water was that they were young and newly hatched specimens of *N. longispina*, which appeared like giants, twice as great in length,

in the same water; but the subsequent discovery of the characteristic differences in the structure of the lorica obliges me to give it a new specific name. Moreover, a number of the examples were carrying an egg on the postero-ventral side, showing that they are mature animals.

The internal anatomy was not specially studied, but appears to be normal and the same as in other species of the genus.

The specific diagnosis of *Notholca bostoniensis* may be expressed as follows:

Lorica ovoid, greatly produced behind into a long spine; four occipital spines, the *left* median spine very long, the other three small, of about equal size.

Total length of lorica, 360μ ($\frac{1}{71}$ in.); long anterior spine, 136μ ($\frac{1}{188}$ in.); posterior spine, 122μ ($\frac{1}{210}$ in.).

Oecistes, sp.?

In the same water I observed a free-swimming tube-dweller of the genus *Oecistes*, which is unlike any species that I am acquainted with or that I have seen described. Unfortunately my observations were too hurried, and the preservation *en bloc* of the material did not produce sufficiently well-preserved and expanded specimens to enable me to give a good description of it.

The animal inhabits a tube perfectly cylindrical in shape, open at the anterior end, and rounded and closed posteriorly, 340μ ($\frac{1}{75}$ in.) long and 75μ ($\frac{1}{10}$ in.) wide. The anterior two-thirds of the tube is semi-opaque by being covered with brown material in the form of rodlets; the density of the material diminishes posteriorly, leaving the posterior third of the tube quite clear.

Of the corona of the rotifer inhabiting this tube I can only say that it is nearly circular with a well-marked notch on the ventral side. Two fairly long cylindrical ventral antennae were readily seen in contracted specimens. The body of the *Oecistes* is 238μ ($\frac{1}{107}$ in.) long when partially contracted, cylindrical, tapering posteriorly into a short foot, which appears always fixed to a short, thin, rigid stalk 54μ ($\frac{1}{70}$ in.) long, the posterior end of which lies free in the tube. Two red eyes, wide apart on the corona, were observed.

This being all the description I can give of this probably new

species, I prefer not to give it a name. Perhaps some member of the Boston Society of Natural History may look for it and supply a good description and figure.

It might be suggested that this *Oecistes* may have been fixed and knocked off its support; but as I did not take up any weed, and found quite a score of specimens in the material collected with the plankton net, and, moreover, saw animals freely swimming in a micro-trough under the microscope, I do not think I am in error in considering this a free-swimming form. We have several free-swimming Floscules, and therefore there seems no reason why an *Oecistes* should not take to a free and roving life.

The following other species of Rotifera found in this collection may be specially mentioned:

Pterodina parva, characterised by the peculiar pear-shaped lorica, was found only once before by Dr. Ternetz, near Bale, in Switzerland; his figure enabled me to recognise it without difficulty. In my paper on "Some Little-known Species of Pterodina,"* I have reproduced Dr. Ternetz's figure, but most unfortunately a serious error has crept into this copy. The foot is there indicated as if issuing from near the middle of the lorica, whilst the position of the opening is near the posterior margin on the ventral side. Dr. Ternetz's drawing is perfectly correct, and, as a figure is always remembered better than a description, I have reproduced a correct figure of this rare Pterodina on Plate 27, Fig. 6.

The size of *Pterodina parva* is $99\ \mu$ ($\frac{1}{258}$ in.) long by $95\ \mu$ ($\frac{1}{67}$ in.) wide.

Taphrocampa viscosa is a rare species, found before only in Finland by Dr. Levander.

Polychaetus subquadratus, *Ploesoma lenticulare*, *Polyarthra aptera* are all three rare and not often seen.

Synchaeta.—Five species of the genus were readily recognised: *S. pectinata* and *oblonga* are common everywhere, but *longipes*, *stylata*, and *cecilia* are rather rare.

In the afternoon of August 22nd the members of the Zoological Congress were hospitably received at Wellesley College, a Ladies' University near Boston, in the extensive and beautiful

* *Journ. Quekett Micr. Club*, vol. vii. (1898) pp. 24-30.

grounds of which there is a large lake covering many acres. Rowing out on this lake, I made a collection with the condensing net, but on examination at home obtained therefrom only the following six species of Rotifera :

- Floscularia mutabalis*, Bolton.
Polyarthra platyptera, Ehrenbg.
Diurella stylata, Eyfert.
Rattulus cylindricus, Imhof.
Monostyla lunaris, Ehrenbg.
Anuraea cochlearis, Gosse.

No doubt a closer examination of various parts of this lake, and at various seasons, would bring to light a much greater number and variety of Rotifera.

EXPLANATION OF PLATES 26 AND 27.

- Fig. 1. *Notholca bostoniensis*, sp.n., lateral view, \times 425.
 „ 2. „ „ dorsal view, \times 425.
 „ 3. „ „ ventral view, \times 425.
 „ 4. „ „ lateral view, \times 220.
 „ 5. „ *longispina*, dorsal view, \times 220.
 „ 6. *Pterodina parva* (Ternetz's figure), \times 575.